

AMENDMENTS TO THE CLAIMS

This listing of claims will replace all prior versions, and listings, of claims in the application:

LISTING OF CLAIMS:

Claims 1-30 (Canceled).

31. (New) A method of marking a datagram transmitted in a communications network comprising routers interconnected by transmission links from a datagram source terminal connected to a first router of the network to a datagram destination terminal connected to a second router of the network, the datagram comprising a vector formed of ordered fields each containing a reference, the datagram further comprising a vector index field, and each router having a table of references, the method comprising the following steps executed when a router receives the datagram:

reading a value in the index field of the datagram;

reading the reference contained in the field of the vector of the datagram designated by the read index value;

if the table of the router does not contain the read reference, writing a reference selected in the table of the router into the field of the vector of the datagram designated by the read index value;

writing into the index field of the datagram a value equal to the read value incremented by one unit; and

forwarding the datagram to a next router of the network.

32. (New) The method of Claim 31, wherein the references contained in the table of references of the router are associated with respective routes in the network.

33. (New) The method of Claim 32, wherein the table of references of the router is a portion of a routing table of said router, said portion corresponding to a single destination prefix contained in the routing table.

34. (New) The method of Claim 31, wherein the datagram belongs to a flow of datagrams sent successively by the source terminal to the destination terminal, and wherein the read reference is identical to a reference written by said router at the time of forwarding an earlier datagram of said flow.

35. (New) The method of Claim 31, wherein the datagram belongs to a forward flow of datagrams sent successively by the source terminal to the destination terminal, said forward flow relating to a communication session, and wherein said datagram further comprises an additional vector formed of fields that are intended to receive references written into the fields of a vector of a backward flow datagram relating to said communication session, sent by the terminal receiving forward flow datagrams and received by the terminal sending forward flow datagrams before sending said forward flow datagram.

36. (New) The method of Claim 35, wherein initial references are written by the source terminal into the fields of the vector of said forward flow datagram, said initial references being respectively identical to references contained in fields of an additional vector of the backward flow datagram.

37. (New) The method of Claim 35, wherein said forward flow datagram further comprises a vector length field that is intended to receive the last value written into the index field of the backward flow datagram.

38. (New) A method of forwarding a datagram by a router of a communications network, the router having a table of references associated with respective routes between said router and a destination terminal of the datagram connected to the network, the forwarding method comprising the following steps:

on reception of the datagram by the router, reading a reference in the datagram; and
looking up the read reference in the table of references of the router,
if the table contains the read reference, forwarding the datagram along the route associated with the read reference,
if not, selecting a reference in the table and forwarding the datagram along the route associated with the selected reference; in which method the read reference was written beforehand into the datagram using the marking method of Claim 1.

39. (New) The method of Claim 38, wherein the reference selected in the table of references of the router is also written into said datagram using the marking method of Claim 1.

40. (New) The method of Claim 38, wherein the table of references is associated with a single destination prefix contained in a routing table of said router.

41. (New) The method of Claim 40, comprising the following steps executed at the time of reception of the datagram by the router before looking up the read reference in the table of references of said router:

reading a destination address in the datagram; and
selecting in the routing table of said router the longest destination prefix corresponding to the read destination address, the table of references of said router in which the reference read in the datagram is then looked up being associated with the selected destination prefix.

42. (New) The method of Claim 38, wherein the table of references further comprises, for each reference of said table, a load value assigned to the route associated with said reference, and wherein the selected reference corresponds to a minimum load value of the routes associated with references contained in said table of references.

43. (New) A terminal comprising:

- means for producing a datagram to be sent by the terminal, the datagram comprising an ordered field vector and a vector index field;
- means for writing an initial reference into each field of the vector of the datagram to be sent by the terminal; and
- means for writing an initial value into the index field of the datagram to be sent by the terminal.

44. (New) The terminal of Claim 43, further comprising:

- means for reading second references in fields of an additional vector contained in a datagram received by the terminal; and
- means for storing the second references with communication session context data of the received datagram in a communication session context table of said terminal,

wherein the initial reference written into each field of the vector of the datagram to be sent by the terminal is one of said second references read in a field of the additional vector of the received datagram when the datagram to be sent belongs to the communication session of the received datagram.

45. (New) The terminal of Claim 44, wherein the means for producing the datagram to be sent are such that the datagram to be sent further comprises an additional field vector, the terminal further comprising:

- means for reading first references in fields of a vector contained in the received datagram;
- means for storing said first references in the table of communication session contexts of said terminal with the communication session context data of the received datagram; and
- means for writing said first references into the fields of the additional vector of the datagram to be sent by the terminal when the datagram to be sent belongs to the communication session of the datagram received.

46. (New) A router comprising:

- means for reading a value in a vector index field of a datagram received by the router;
- means for reading a reference contained in a vector field of said datagram designated by the read index value;
- means for storing a table of references;
- means for associating references in the table with routes;
- means for looking up a read reference in the table of references of said router, adapted to command forwarding of said datagram along the route associated with the read reference if the table of references contains the read reference;
- means for selecting a reference in the table of references, adapted to be activated if the table of references does not contain the read reference and to command forwarding of said datagram along the route associated with the selected reference; and
- means for writing a value equal to the read value incremented by one unit into the index field of said datagram.

47. (New) The router of Claim 46; further comprising means for writing the selected reference into the vector field of said datagram designated by the read index value.

48. (New) The router of Claim 46, wherein the association means are included in means for calculating a routing table of said router, said calculation means belonging to a control unit of said router;

the association means being further adapted to associate a table of references with a single destination prefix contained in the routing table of said router, the table of references of said router comprising, for each reference in said table, a load value assigned to the route associated with said reference; and

the reference selection means being adapted to select the reference for which the route corresponds to a minimum load value.